

WIPE DISPENSING SYSTEM

Field of the Invention

This invention relates generally to a packaging system for wipes and more particularly to a thin profile wipe dispensing container with improved storage and dispensing features.

Background of the Invention

Pre-moistened disposable towelettes or wipes were developed out of a need for convenience where water may not be available. Wipes may be used on a variety of target surfaces in the home and business. A user may easily and conveniently hand wipe over a target surface using the wipe to clean, polish or otherwise treat the target surface in some manner. As is well known in the art, a pre-moistened wipe can be any wipe, towel, tissue or sheet like product including natural fibers, synthetic fibers, synthetic material and combinations thereof, that is wet or moist or becomes wet during use or prior to use. The wipe may be saturated with an aqueous or other chemical based solution of a cleaning or other chemical agent. Preservatives and fragrances may also be added. Wipes may also be dry.

Wipes have been traditionally dispensed as a stack in sheet form from a tub-like container with a hinged lid on the top that overlaps the upper outer edge of the container when the lid is closed. The lid is opened and individual or singularized sheets of the wipes may be dispensed. Wipes may also be stacked and packaged in a refill softpack. Another type of container that has been used for wipes includes a plastic canister in which the wipes are pulled from the center of a hollow coreless roll having perforated sheets through a flexible opening in the lid at the top of the canister in a direction that is

parallel to the axis of the roll. These canisters generally have a snap top lid that is opened to expose a piece of the wipe through the flexible opening that can then be pulled out of the flexible opening to remove the desired amount of wipes. Once pulled out, the wipe can then be torn off, usually at a perforation, and the lid closed.

These wipe packaging methods have their shortcomings. For example, when packaged in the tub, the wipes have a tendency to dry out because of repeated lid openings and the lid's failure to completely reclose over repeated use. The tubs are bulky making transport and storage more difficult. Similarly, the wipes in softpacks dry out because the "peel and reseal" feature becomes less effective over time. Also in the case of stacked wipes, it is often difficult to separate a single wipe from the rest of the wipe stack and from the container. There are a number of reasons for this difficulty. Wipes are typically folded in a W or Z configuration and either placed one on top of the other (non-interfolded) or interleaved (interfolded) with an adjacent wipe and placed one on top of another to form a stack. The leading edge, particularly when folded, may not be readily identifiable. Also, it may also be difficult for the user to grip a sufficient amount of the leading edge such that the leading edge portion of the wipe is torn without dispensing of a single wipe. There is also a tendency for the wipes to adhere to each other.

Rolled wipe logs suffer from similar shortcomings. Although rolled logs of wipes in canisters generally tend to stay wetter longer and occupy less shelf space than the tubs, the user cannot determine how many wipes are left on the log and they are particularly susceptible to mold because of non-uniform wetting and to "chaining" wherein more than one wipe is dispensed at a time through the flexible opening in the lid. If not used right away, the exposed wipe tends to dry out and is wasted. If the wipe is not drawn through

the flexible opening, as in the case of starting the first wipe or one that has receded into the canister, a user may try to grasp the wipe through the flexible opening but usually cannot readily maneuver the wipe from inside the canister through the flexible opening. The user's finger often gets caught in the opening and the wipe remains inaccessible. This failure necessitates complete removal of the entire canister lid in order to (again) draw the wipe through the flexible opening. In having to remove the entire lid, the dispensing feature of the wipe canister thereby becomes useless for its intended purpose and the entire roll of wipes is exposed to possible contamination and dries out faster. The wipes in a canister are also prone to wrinkling, twisting and bunching. In order to dispense the wipes from a canister, the canister must be upright which limits its use and storage possibilities. The cylindrical shape of the canister is also not that space efficient on shelves. In addition, the canister lids often wear out necessitating their disposal after one use and the two-piece construction (canister and lid) often means higher production costs. There have been several attempts to address these problems but none have been entirely successful.

Accordingly, there has been a need for a novel dispensing container and method that conveniently permit a single fresh wipe to be dispensed one at a time. There is also a need for a novel dispensing container and method that permit substantially easy access to the wipes within the container substantially without the danger of finger injury. There is another need for a novel dispensing container and method that may be used for both wet and dry wipes with substantially uniform wetting and substantially little wrinkling. There is still another need for a novel dispensing container and method that is substantially thin profile, substantially flat, lightweight, easy to stack, and occupies less space per volume

of wipes enabling easier storage and transport. There is an additional need for a novel dispensing container and method that is substantially easier to produce. There is a still further need for a novel dispensing container and method that are convenient to use and simple to open and reclose. There is a still further need for a novel dispensing container and method that dispense wipes whether the container is positioned horizontally or vertically on a surface or within a drawer and that conveniently allow the user to determine how many wipes are left. There is also a need for a novel dispensing container and method that is easily refillable and reusable. The present invention fulfills these needs and provides other related advantages.

Summary of the Invention

According to the present invention and exemplary embodiments thereof described herein, a thin profile wipe dispenser is provided for use in storing and dispensing stacked wipes. The wipe dispenser comprises, generally, a thin-profile upright container body having an open end for receiving wipes. A lid is mounted on the open end of the container body and retained in place by a hinge or the like. When closed, the lid is flush with the container body. The lid includes an internal bead for snap fit connection with the container body. The wipes are drawn through a dispensing aperture in a removable bridge seated in the open end of the container body. A spring within the container body retains the wipes in an position to improve dispensing of one wipe at a time.

Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings which illustrate, by way of example, the principles of the invention.

Brief Description of the Drawings

The accompanying drawings illustrate the invention. In such drawings:

FIG. 1 is a perspective view of a dispensing container embodying the novel features of the invention, illustrating a container body with a lid in an open position to expose a bridge defining a dispensing aperture of a first configuration;

FIG. 2 is a sectional view of the container body of the dispensing container of FIG. 1, illustrating a leaf spring within the container body and a lip for mating and sealing relation with an internal bead in the lid;

FIG. 3 is a front view of the novel dispensing container of FIGS. 1 and 2, illustrating the lid in a closed and sealed position;

FIG. 4 is a side view of the dispensing container of FIGS. 1 and 3;

FIG. 5 is a top view of the dispensing container of FIGS. 1, 3 and 4;

FIGS. 6a-6m is a top view of the bridge, illustrating alternative configurations of the dispensing aperture;

FIG. 7 is a side view of the bridge with a generally C-shaped configuration;

FIG. 8 is a front view of the bridge of FIG. 7, illustrating the dispensing aperture in a substantially central portion thereof; and

FIG. 9 is a top view of the bridge of FIGS. 7 and 8.

Detailed Description of the Preferred Embodiments

As shown in the drawings for purposes of illustration, the present invention relates to an improved dispensing container, generally designated in the accompany drawings by the reference number 10. The method for dispensing is also provided. The

improved dispensing container is specifically designed to have substantially improved storage and dispensing features over conventional wipe dispensers.

In accordance with the present invention, and as illustrated with respect to preferred embodiments in FIGS. 1-9, the dispensing container 10 comprises, generally, a substantially thin-profile container body 12 having a generally upright and open-ended shape for receiving and containing a stack of wipes (not shown) and a hinged lid 14 that may be pivoted open to provide access to the wipes and pivoted closed to be flush with the container body 12. The dispensing container may further include a bridge 16 defining a dispensing aperture 18a-18m and a spring device 20 to maintain the wipes in a desirable dispensing position within the container body 12.

The container body 12 defines an upper open end 22 and has a bottom wall 24 joined to a front and a rear wall 26 and 28, and a pair of sidewalls 30. The front wall 26 may be shorter than the rear wall with the upper edges of the sidewalls extending angularly upwardly toward the rear wall. The container body 12 can be constructed to have virtually any convenient size and/or decoration with a capacity in the range of 10 to 100 ounces being common. The container body 12 may be constructed of a thermoformed material, molded plastic, a carton, one or more polymeric materials, metallized or laminate structures, lined paperboards, etc. to define a generally rectangular profile (See FIG. 4). Plastic is normally preferred because it eliminates the risk of breakage and is relatively lightweight.

The stack of non-interfolded or interfolded wipes (not shown) may be placed directly into the container body 12 or packaged in a substantially moisture impermeable

wrapper (i.e. a softpack) to provide a refill package for the dispensing container. The stack may be typically placed parallel to the height of the container body 12.

The lid 14 has a top wall 32 joined to a front lid wall 34, and a pair of substantially triangular lid sidewalls 36. The free edges of the lid sidewalls 36 may extend angularly downwardly toward the front wall of the lid when in the closed position as shown in FIG. 4. The lid is typically constructed from the same material as the container body, preferably of lightweight molded plastic. The container body and lid may be manufactured from a single mold therefore lowering production costs. Of course, the dispensing container may be manufactured by other known methods.

The lid may be mounted onto the upper edge of the rear wall of the container body. The lid is preferably attached to the upper edge of the rear wall of the container body by a hinge (not shown) or the like. The lid opens from the front of the dispensing container as shown in FIG. 1 and bends back to lay substantially flat. When deployed in the open position, the bridge 16 seated in the upper open end 22 of the container body is exposed. The lid may include an internal bead (not shown) or the like at a lower edge thereof for snap fit connection with a lip 37 (FIG. 2) in an upper portion of the container body in order to securely close the lid. In this regard, the lid includes a lower edge retained in mating and sealing relation to the top of the container body. When the lid is closed as shown in FIGS. 3 and 4, the dispenser container 10 appears as a substantially seamless container have a substantially thin profile. As such, the dispensing container may easily be stored and transported where space is at a premium.

As shown best in FIGS. 7-9, the bridge 16 may be substantially C-shaped. The bridge includes a generally rectangular central portion 38 between first and second ends

40 and 42 oriented downward to the central portion when fitted into the open end of the container body. The central section 38 defines the dispensing aperture 18a-18m. The bridge 16 may be press fit into the upper open end of the container body 12. The bridge may be held in place at the inboard sides of the walls at the upper portion of the container body 12. For example, the bridge may span between the front and rear walls of the container body or between the two sidewalls 30. The bridge 16 is removably mounted to permit access to the interior of the container body 12. This improved feature is helpful to access a wipe within the container body (i.e. a wipe not drawn through the dispensing aperture or to refill the container body with a stack of wipes). Alternatively, the bridge 16 is sized to define a finger gap between the bridge and the walls at the upper portion of the container body for the user to insert a finger and grab onto the leading edge of a wipe within the container body. The bridge 16 is thus easily removed to permit access to and replacement of the stack of wipes.

The central section of the bridge defines the dispensing aperture. The edges of the aperture 18a-18m may be smooth so that neither the wipe nor the user's finger may be caught when drawing the wipe from the dispensing container. The dispensing aperture 18a-18m may be formed in any number of configurations, as exemplified by those shown in corresponding FIGS. 6a-6m. The dispensing aperture 18a-18m may be sized and shaped to accommodate differences in the wipe material. For example, each of the dispensing aperture configurations shown in FIGS. 6a-6m were pull tested for dispensing hydrospun, spunlace, thermobond, air laid and needlepunched wipes. The results of the pull test are set forth below:

| Figure No. | Hydrospun | Spunlace | Thermobond | Airlaid | Needlepunch |
|------------|-----------|----------|------------|---------|-------------|
| 6a | Failed | Failed | Failed | Failed | Passing |
| 6b | Passing | Best | Passing | Best | Passing |
| 6c | Passing | Failed | Passing | Passing | Passing |
| 6d | Passing | Failed | Best | Passing | Passing |
| 6e | Failed | Failed | Failed | Failed | Passing |
| 6f | Failed | Failed | Failed | Passing | Failed |
| 6g | Passing | Failed | Failed | Passing | Best |
| 6h | Passing | Passing | Passing | Passing | Passing |
| 6i | Failed | Failed | Failed | Passing | Failed |
| 6j | Passing | Passing | Passing | Passing | Passing |
| 6k | Passing | Failed | Failed | Passing | Best |
| 6l | Failed | Failed | Failed | Failed | Passing |
| 6m | Best | Passing | Passing | Passing | Passing |

A “failed” grade indicates that the wipe tore while being dispensed. The air laid materials tend to tear easily and thus may be combined with a larger dispensing aperture. Non-woven wipes are more resistant to tearing and thus a smaller dispensing aperture may be used.

Although use of the bridge 16 in the dispensing container has been described, it is to be appreciated that a dispensing container without the bridge 16 may be used to dispense wipes in the same manner as with conventional tubs but with improved storage and dispensing features due to the presence of the spring device 20 as described hereinafter and the slim profile of the dispensing container.

The container body 12 may also include a spring device 20 including a spring element in the form of a leaf spring as shown in FIG. 2. The leaf spring biases the wipes toward one of the sidewalls and toward the upper end of the container body. The leaf spring substantially retains the vertically-placed wipes in an upright fixed position to help dispense one wipe at a time. The leaf spring has a fixed end 44 and a floating end 46. The fixed end 44 may be attached to the inside bottom wall 24 of the container body 12 with the floating end 46 toward the open end of the dispensing container as shown in FIG. 2.

When the lid 14 is pivoted closed on the open end of the container body 12 as shown in FIGS. 3 and 4, the dispensing container 10 appears substantially seamless with a substantially thin profile to provide a consistent shape and excellent surface finish. The smooth, contoured arched shape of the dispensing container 10 enables substantially easy and economical storage and transport.

In use, the lid 14 may be flipped open by the user to expose the wipe drawn through the dispensing aperture 18a-18m in the bridge 16. If the wipe is not exposed, the user may either grasp the wipe through one of the finger gaps on either side of the bridge 16 or temporarily remove the bridge 16 to gain access to the interior of the dispensing container. Similarly, when the dispensing container is empty of wipes, it may be refilled by removing the bridge 16, inserting the refill stack of wipes, and replacing the bridge 16 followed by drawing of the wipe through the dispensing aperture 18a-18m. Once the wipe has been removed, the lid 14 may be securely snapped closed to conveniently store or transport the wipe dispensing container until its next use. The wipe may be dispensed whether the container is positioned horizontally or vertically on a surface or within a drawer.

From the foregoing, it is to be appreciated that the above-described container is substantially thin profile, attractive and very space-efficient, and effective at dispensing wipes.

Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited, except as by the appended claims.